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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/827,323	04/20/2004	Manabu Saito	113539.01	4040
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EXAMINER				
GRAINGER, QU'ANA MASHELL				
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2852				
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

### Office Action Summary

**Application No.**

10/827,323

**Applicant(s)**

SAITO ET AL.

**Examiner**

Quana M. Grainger

**Art Unit**

2852

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 29 January 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-21, 23-29 and 31 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-21, 23-29 and 31 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB-08)  
Paper No(s)/Mail Date \_\_\_\_\_

- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Claim Objections***

1. Claims 1-16 are objected to because of the following informalities. Claims 1, 2, and 15-16 recite “delimited by the space adapted to be displaced by stored developer”. The space may be filled by the stored developer but it is not displayed. Appropriate correction is required.

### ***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

4. Claims 1-6, 9-20, 23-29, and 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yano (cited by applicant, JP07-168507A) in view of Kimura et al. (JP11-193164A).

Yano teaches an image forming apparatus comprising: an image forming section having a developer storage space 25, 28 into which developer is stored; and an ejection unit that ejects therefrom a recording medium on which an image has been formed by the image forming section, and a second developer storage portion 25 arranged at a lower portion thereof, while sandwiching therebetween a horizontal line which is extended from a latent image forming position of the image carrier by the optical writing apparatus along a horizontal direction, and the first developer storage portion is connected to the second developer storage portion (abstract).

Yano teach a process cartridge comprising an image carrying body; at least one process unit; and a developer replenishment box, wherein the developer replenishment box is communicatively connected to a developing housing; and wherein the developer replenishment box is disposed in an upper position than a latent image writing position on the image carrying body (Yano, figures 4-5).

Yano teaches an image forming apparatus comprising: a latent image forming unit that forms a latent image on an image carrying body; and a developing unit that visualizes the latent image formed on the image carrying body by using a developer, wherein a developing housing containing the developer is communicatively connected to a developer replenishment box; and wherein the developer replenishment box is disposed in an upstream of a latent image writing position on the image carrying body, and an upper portion of the developer replenishment box is substantially higher than an upper portion of the image carrying body, and a waste developer recovering box integrally attached to the developer replenishment box. The image forming apparatus further comprising a process cartridge detachably attached to the apparatus body, the process cartridge into which the image carrying body and at least one process unit are

incorporated, wherein the process cartridge includes the developer replenishment box. The developer replenishment box is detachably attached to the process cartridge. The image carrying body cartridge including at least the image carrying body is detachably attached to the process cartridge.

Yano teaches a process cartridge comprising: an image carrying body; at least one process unit; and a developer replenishment box, wherein the developer replenishment box is communicatively connected to a developing housing; and wherein the developer replenishment box is disposed in an upper position than vertically above a latent image writing position on the image carrying body. The developing housing is disposed in a lower part of the latent image writing position.

Yano teaches an image forming apparatus comprising: an image forming section having a developer storage space into which developer is stored; and an ejection unit that ejects therefrom a recording medium on which an image is formed by the image forming section, the developer storage space owns a first developer storage portion arranged at an upper portion thereof, and a second developer storage portion arranged at a lower portion thereof, while sandwiching therebetween a horizontal line which is extended from a latent image forming position of the image carrier by the optical writing apparatus along a horizontal direction, and the first developer storage portion is connected to the second developer storage portion (abstract; figures 1,4-5, & 7). The image forming section includes an image carrier, an optical writing apparatus for forming a latent image on the image carrier, and a developing apparatus containing the developer storage space, for developing the latent image of the image carrier so as to produce a visible image (figure 1). The developer storage capacity of the first developer storage portion 25 is

larger than that of the second developer storage portion 28. The optical writing apparatus is constituted by a laser exposing apparatus 27, and is arranged at a position which is extended from the latent image forming position of the image carrier to the horizontal direction.

The image forming section includes a process cartridge which includes an image carrier on which a latent image is formed, and a developing unit containing the developer storage, for developing the latent image of the image carrier so as to produce a visible image. The grip portion is provided on the wall surface which surrounds the developer storage space and the grip portion is formed in such a manner that the grip portion is entered into an inner side of a wall surface of the grip portion (the process cartridge is grip-able by the installer). The flow path that causes air to pass therethrough is formed between the ejection portion and the wall surface. The flow path is constructed of a rib which is formed on at least one of the ejection unit and the wall surface. The image forming apparatus rib is formed along an ejection direction of the recording medium which is ejected to the ejection unit.

Yano teaches a process cartridge used in an image forming apparatus containing an ejection unit, a developer storage space that stores therein developer, and also, the developer storage space owns a first developer storage portion arranged at an upper portion thereof, and a second developer storage portion arranged at a lower portion thereof, while sandwiching therebetween a horizontal line which is extended from a latent image forming position of the image carrier by the optical writing apparatus along a horizontal direction, and the first developer storage portion is connected to the second developer storage portion. A process cartridge 24 used in an image forming apparatus containing wherein the developer storage space owns a first developer storage portion arranged at an upper portion thereof, and a second developer storage

portion arranged at a lower portion thereof, while sandwiching therebetween a horizontal line which is extended from a latent image forming position of the image carrier by the optical writing apparatus along a horizontal direction, and the first developer storage portion is connected to the second developer storage portion (figure 1 or 4). The recording sheet onto which a visual image is transferred from the image carrying body is transported from a lower part to an upper part; and wherein the developer replenishment box is disposed on an upper side of the latent image writing position on the image carrying body. The image forming apparatus further comprising a discharge tray for accommodating discharged sheets, disposed in an upper part of the developer replenishment box. The upper surface housing of the developer replenishment box is an inclined surface inclined in the same direction as of the discharge tray accommodating the recording sheets. The developer replenishment box is capable of containing a larger amount of developer than the developing housing disposed in a lower side of the latent image writing position on the image carrying body.

The developer replenishment box is disposed in an upper part of a latent image writing position on the image carrying body; wherein the developing housing is disposed in a lower part of the latent image writing position; and wherein the developer replenishment box is communicatively connected to the developing housing by way of a communicative passage, which makes a detour around the latent image writing position.

Yano teaches an image forming apparatus comprising: a latent image forming unit that forms a latent image on an image carrying body; a developing unit that visualizes the latent image formed on the image carrying body by using a developer; and the image carrying body temporarily holds the visual image formed on the image carrying body and transferring the visual

image onto a recording sheet, wherein the recording sheet is transported from a lower part to an upper part; wherein a developing housing containing the developer is communicatively connected to a developer replenishment box; and wherein the developing housing and the developer replenishment box are disposed in an upper part of a latent image writing position on the image carrying body.

Yano does not teach wherein the ejection unit owns an inclination portion which has a lower end and an upper end, while being obliquely formed, at least a portion of the developer storage space of the image forming section is arranged in an area which is surrounded by the inclination portion, a horizontal plane extended from the lower end of the inclination portion, and a vertical plane extended from the upper end of the inclination portion, the developer storage space owns a first developer storage portion arranged at an upper portion thereof.

Kimura teaches an ejection unit owns an inclination portion which has a lower end and an upper end, while being obliquely formed, at least a portion of the developer storage space of the image forming section is arranged in an area which is surrounded by the inclination portion, a horizontal plane extended from the lower end of the inclination portion, and a vertical plane extended from the upper end of the inclination portion, the developer storage space owns a first developer storage portion arranged at an upper portion thereof. The inclination portion of the ejection unit has the lower end in the vicinity of an exit port from which the recording medium is ejected, and is heightened toward the upper end of the inclination portion.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the teaching of Kimura with the image forming apparatus of Yano to



miniaturize the image forming device by placing the process cartridge in a part of the space formed by an incline discharge tray.

5. Claims 7 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yano in view of Kimura et al. (JP11-193164A) and further in view of Sawada (5,631,726).

Yano does not teach an inclination portion can be freely opened/closed, and that the process cartridge can be detachably mounted via an opening portion which is formed when the inclination portion is opened.

Sawada teaches an image forming apparatus wherein the process cartridge is attached to and detached from the apparatus body by opening an opening/closing cover provided in an upper part of the apparatus body.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the teaching of Sawada with the image forming apparatus of Yano to easily remove and replace a process cartridge from an image forming apparatus (Sawada, figure 3, column 3, lines 3- 32).

6. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yano in view of Kimura et al. (JP11-193164A) and further in view of Yasui et al. (cited by applicant JP10-181978A)

Yano does not discuss a paper supplying apparatus having a supply unit for supplying the recording medium; a fixing apparatus arranged on the downstream side of the transfer apparatus;

and does not teach a portion of the transport path defined from the supply unit of the paper supply apparatus up to the fixing apparatus is formed along a substantially vertical direction.

Yasui et al. teaches an image forming apparatus further comprising: a paper supplying apparatus having a supply unit for supplying the recording medium; a transfer apparatus provided opposite to the image carrier of the process cartridge; a fixing apparatus arranged on the down-stream side of the transfer apparatus; and a transport path that transports the recording medium supplied from the supply unit of the paper supplying apparatus between the image carrier and the transfer apparatus, and for ejecting the recording medium via the fixing apparatus to the ejection unit, wherein a portion of the transport path defined from the supply unit of the paper supply apparatus up to the fixing apparatus is formed along a substantially vertical direction (abstract; figures 1-2).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the teaching of Yasui with the image forming apparatus of Yano since Yano does not teach the layout for the image forming apparatus that would use a process cartridge utilizing a horizontal latent image forming position.

#### ***Response to Arguments***

7. Applicant's arguments filed 1-29-2009 have been fully considered but they are not persuasive.

Applicant's arguments with respect to the claims have been considered but are moot in view of the new ground(s) of rejection for claims 17-20, 29 and 31.

Applicant argues that Yano fails to disclose "wherein an upper surface of the developer replenishment box is an inclined surface such that the upper surface is parallel in cross-section to an inclined portion of the discharge tray, accommodating the recording sheets, when the developer replenishment box is in an inserted state," as recited in independent claim 17. Yano fails to disclose any structure which may reasonably be considered to correspond to a discharge tray in the manner recited in claim 17. Further, none of the other applied reference remedy this deficiency. For example, JP-A-11-193164 to Kimura et al. (hereinafter "Kimura") discloses discharging tray 9. However, no upper surface of any structure which may reasonably be considered to correspond to a developer replenishment box may reasonably be considered to be parallel in cross-section to any inclined portion of discharging tray 9.

However, Yano does not teach the format of the inclined portion for a discharge tray. In fact, Yano does not teach a discharge tray at all. Kimura et al. teaches an inclined discharge tray that has a process cartridge positioned underneath so that the space underneath the inclined portion is filled by the process cartridge. Thus, the combination of Yano and Kimura suggest that a process cartridge such as taught by Yano would fit underneath an inclined discharged tray such as taught by Kimura to save space and reduce the size of the image forming apparatus.

The claims remain rejected as discussed above.

#### ***Contact Information***

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Quana M. Grainger whose telephone number is 571-272-2135. The examiner can normally be reached on 10am-6pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Gray can be reached on 571-272-2119. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Quana M Grainger/  
Primary Examiner, Art Unit 2852

QG